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OM protein - protein search, using sw model

Run on: May 16, 2003, 10:34:35 ; Search time 34 Seconds  
(without alignments)  
47.030 Million cell updates/sec

Title: US-09-551-151A-43

Perfect score: 64

Sequence: 1 SPQGIAGGRNFN 12

Scoring table: BLOSUM62

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 272260

Minimum DB seq length: 0  
Maximum DB seq length: 18

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database :

A.GeneSeq\_101002:\*

- 1: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1980.DAT:\*
- 2: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1981.DAT:\*
- 3: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1982.DAT:\*
- 4: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1983.DAT:\*
- 5: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1984.DAT:\*
- 6: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1985.DAT:\*
- 7: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1986.DAT:\*
- 8: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1987.DAT:\*
- 9: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1988.DAT:\*
- 10: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1989.DAT:\*
- 11: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1990.DAT:\*
- 12: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1991.DAT:\*
- 13: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1992.DAT:\*
- 14: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1993.DAT:\*
- 15: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1994.DAT:\*
- 16: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1995.DAT:\*
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- 18: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1997.DAT:\*
- 19: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1998.DAT:\*
- 20: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA1999.DAT:\*
- 21: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA2000.DAT:\*
- 22: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA2001.DAT:\*
- 23: /SIDS2/gcgdata/geneSeq/geneSeq-emb1/AA2002.DAT:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

| Result No. | Score | Query Match Length | DB ID          | Description        |
|------------|-------|--------------------|----------------|--------------------|
| 1          | 64    | 100.0              | 12 20 AAM94414 | Cancer protease-se |
| 2          | 42    | 65.6               | 8 18 AAM7687   | Substrate #1 for m |
| 3          | 42    | 65.6               | 8 21 AAY97994  | Synthetic substrat |
| 4          | 42    | 65.6               | 8 22 AAD07721  | Human Leukemia ce  |
| 5          | 42    | 65.6               | 8 22 AAB70111  | Synthetic collagen |
| 6          | 42    | 65.6               | 8 23 AAO14105  | Dinitrophenol-tag  |
| 7          | 42    | 65.6               | 9 14 AAR38477  | Sequence of synthe |
| 8          | 42    | 65.6               | 9 18 AAW27492  | Cell binding pepti |
| 9          | 42    | 65.6               | 9 18 AAM18826  | Collagen binding p |
| 10         | 42    | 65.6               | 9 20 AAY29992  | Collagen cell bind |

|    |    |      |                |                     |
|----|----|------|----------------|---------------------|
| 11 | 42 | 65.6 | 9 22 AAG67403  | Synthetic peptide   |
| 12 | 42 | 65.6 | 15 12 AAR11114 | Collagen peptide a  |
| 13 | 42 | 65.6 | 15 14 AAR38476 | Sequence of peptid  |
| 14 | 42 | 65.6 | 15 18 AAM27491 | Cell binding pepti  |
| 15 | 42 | 65.6 | 15 18 AAM18825 | Collagen binding p  |
| 16 | 42 | 65.6 | 15 20 AAY29991 | Collagen cell bind  |
| 17 | 42 | 65.6 | 15 20 AAY29587 | Collagen fibronect  |
| 18 | 42 | 65.6 | 15 22 AAG67402 | Synthetic peptide   |
| 19 | 42 | 65.6 | 15 23 ABB10111 | Collagen cell bind  |
| 20 | 42 | 65.6 | 16 17 AAR92859 | Collagen fragment   |
| 21 | 42 | 65.6 | 16 21 AAY76868 | Collagen receptor   |
| 22 | 41 | 64.1 | 14 22 AAG66971 | Mutant procollagen  |
| 23 | 41 | 64.1 | 18 22 AAG66972 | Mutant procollagen  |
| 24 | 40 | 62.5 | 8 17 AAM17688  | Substrate #2 for m  |
| 25 | 40 | 62.5 | 9 17 AAM49135  | Human Leucocyte an  |
| 26 | 40 | 62.5 | 9 19 AAM75516  | Collagen II specif  |
| 27 | 40 | 62.5 | 12 20 AAM94448 | Mutant procollagen  |
| 28 | 40 | 62.5 | 15 19 AAM75541 | Collagen II specif  |
| 29 | 37 | 57.8 | 7 22 AAO07357  | Gelatinase A (MMP-  |
| 30 | 37 | 57.8 | 7 22 AAO07357  | Gelatinase A (MMP-  |
| 31 | 37 | 57.8 | 7 22 AAO07355  | Gelatinase A, MMP-  |
| 32 | 37 | 57.8 | 8 21 AAB37326  | Peptide linker #11  |
| 33 | 37 | 57.8 | 8 21 AAB01560  | Collagenase sensiti |
| 34 | 37 | 57.8 | 8 22 AAB48683  | Collagenase target  |
| 35 | 37 | 57.8 | 8 23 AAO77962  | Cleavable peptide   |
| 36 | 37 | 57.8 | 8 23 AAO85689  | Collagenase (matri  |
| 37 | 37 | 57.8 | 10 22 AAB74961 | MMP fibrogenic pe   |
| 38 | 37 | 57.8 | 12 19 AAM45366 | Type-I collagen al  |
| 39 | 36 | 56.2 | 8 21 AAB01562  | Collagenase sensiti |
| 40 | 36 | 56.2 | 8 23 AAO85691  | Collagenase (matri  |
| 41 | 35 | 54.7 | 7 14 AAR38479  | Sequence of synthe  |
| 42 | 35 | 54.7 | 7 18 AAM27494  | Cell binding pepti  |
| 43 | 35 | 54.7 | 7 18 AAM18828  | Collagen binding p  |
| 44 | 35 | 54.7 | 7 20 AAY29994  | Collagen cell bind  |
| 45 | 35 | 54.7 | 7 21 AAY97995  | Synthetic substrat  |

#### ALIGNMENTS

|   |  |
|---|--|
| RESULT 1  |  |
| AAW94414  |  |
| ID AAM94414 standard; peptide; 12 AA.                                 |  |
| AC AAM94414;  |  |
| XX  |  |
| DT 15-APR-1999 (first entry)  |  |
| XX  |  |
| DE  |  |
| XX  |  |
| KW Ricin-like toxin; cancer; viral infection; parasitic infection;    |  |
| KW linker; B chain; A chain; protease; fungal infection; malaria;     |  |
| KW rhinovirus; laryngotracheitis; cytomegalovirus; herpes; hepatitis; |  |
| KW cystic fibrosis; multiple sclerosis.                               |  |
| XX  |  |
| OS Unidentified.  |  |
| XX  |  |
| PN Synthetic.   |  |
| PD WO9849311-A2.  |  |
| XX  |  |
| PE 30-APR-1998; 98WO-CA00394.   |  |
| XX  |  |
| PR 29-OCT-1997; 97US-0063715.   |  |
| XX  |  |
| PR 30-APR-1997; 97US-0045148.   |  |
| XX  |  |
| PA (DNOV-) DE NOVO ENZYME CORP.                                       |  |
| XX  |  |
| PI Borgford T;  |  |
| XX  |  |
| DR WPI; 1999-009431/01.   |  |

XX New nucleic acid encoding ricin-like toxin with an interchain linker  
 PT cleaved by protease - is specific for diseased cells, useful for.  
 PT e.g. killing selectively cancer or infected cells  
 XX  
 PS Claim 24; Fig 21; 352pp; English.  
 CC The present invention describes new purified and isolated nucleic acids  
 CC (1) encoding: (i) the A and B chains of a ricin-like toxin (II); and  
 CC (ii) a heterologous linker, joining the two chains and including a  
 CC cleavage recognition site for a disease-specific protease (III). Also  
 CC described are: (1) plasmids or baculovirus transfer vectors that contain  
 CC (1); and (2) recombinant protein (IV) consisting of the A and B chains  
 CC of (1) joined by the specified linker. (IV), produced by expression of  
 CC (1) in host cells, are used to inhibit or kill diseased cells that  
 CC produce (III), particularly for treating cancers (e.g. leucocyte  
 CC proliferation; cancer of ovary, pancreas, breast or prostate; glioma) or  
 CC infections caused by fungi, parasites (e.g. malaria) or viruses (e.g.  
 CC cytomegalovirus (CMV), herpes, hepatitis, rhinovirus, laryngotracheitis,  
 CC poliomyelitis or varicella zoster), also cystic fibrosis and multiple  
 CC sclerosis. Alternatively, (1) is used to express (IV) in vivo. (IV) is  
 CC toxic specifically for (III)-expressing cells and does not depend for  
 CC specificity on a cell-binding component. When used to treat virus-  
 CC infected cells, transcytosis and cytotoxicity of (IV) are increased by  
 CC retrograde translocation from endoplasmic reticulum to cytoplasm (which  
 CC some viruses exploit to avoid immune detection), so selectivity and  
 CC safety are further improved. (IV) are not toxic until chain A is  
 CC released and this occurs only in target cells. The present sequence  
 CC represents a specifically claimed cancer protease-sensitive amino acid  
 CC linker from the present invention.  
 XX  
 SQ Sequence 12 AA;  
 Query Match 100.0%; Score 64; DB 20; Length 12;  
 Best Local Similarity 100.0%; Pred. No. 8.8e-05;  
 Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 1 SPOGIAGORNPN 12  
 |||||||||  
 Db 1 SPOGIAGORNPN 12  
 RESULT 2  
 AAW17687  
 ID AAW17687 standard; peptide; 8 AA.  
 XX  
 AC AAW17687;  
 XX  
 DT 07-JUL-1997 (first entry)  
 XX  
 DE Substrate #1 for mammalian matrix metalloproteinase-1.  
 XX  
 KM Enzyme substrate; MMP-1; protease; tissue abnormality; mesoporphyrin IX;  
 KM malignancy; mammalian matrix metalloproteinase-1; bacterial collagenase;  
 KM human interstitial collagenase; cathepsin D; plasmin; fungal infection;  
 KM human collagenase type IV; mammalian matrix proteinase-2; tissue injury;  
 KM 72 kd gelatinase; MMP-2; intravascular clotting; bacterial infection;  
 KM extracellular clotting abnormality; protozoal infection; therapy;  
 KM parasitic infection.  
 XX  
 OS Synthetic.  
 XX  
 PN US5618790-A.  
 XX  
 PD 08-APR-1997.  
 XX  
 PF 05-OCT-1990; 90US-0593867.  
 XX  
 PR 16-MAR-1994; 94US-0213897.  
 PR 05-OCT-1990; 90US-0593867.  
 PR 10-FEB-1992; 92US-0833183.  
 XX  
 PA (TOOH ) UNIV QUEENS KINGSTON.

XX Kennedy JC, Pottler RH, Ringnet M;  
 PI  
 XX  
 DR WPI: 1997-225448/20.  
 XX  
 PT Conjugate system for delivering therapeutic or diagnostic agent to  
 PT tissue abnormality site - useful to treat or detect abnormalities  
 PT caused by, e.g. malignancy or tissue injuries.  
 XX  
 PS Claim 5; Column 18; 10pp; English.  
 CC AAW17687-W17698 represent synthetic substrates for proteases known to be  
 CC active in and/or immediately adjacent to certain specified cell or  
 CC tissue abnormalities. This sequence is a substrate for mammalian matrix  
 CC metalloproteinase-1 (MMP-1), which is also known as human interstitial  
 CC collagenase. These sequences can be used in the conjugate system of the  
 CC invention. The conjugate system is for delivering a therapeutic or  
 CC diagnostic agent to a tissue abnormality site (TAS) in a patient. The  
 CC system comprises a lipophilic or amphiphilic agent, covalently linked to  
 CC a protease sensitive polypeptide (such as this sequence) having an amino  
 CC acid sequence readily cleavable by a protease active at the TAS, but not  
 CC at a normal tissue site, and a solubility modifier conjugated to the  
 CC protease sensitive polypeptide. Peptides sensitive to cleavage by  
 CC bacterial collagenase, cathepsin D, plasmin, human collagenase type IV  
 CC (also known as 72 kd gelatinase, mammalian matrix proteinase-2, or  
 CC MMP-2), or mesoporphyrin IX, can also be used in the system. The system  
 CC can be used to treat or detect tissue abnormalities caused by  
 CC malignancy, tissue injuries, intravascular or extracellular clotting  
 CC abnormalities or bacterial, fungal, protozoal or parasitic infections.  
 XX  
 SQ Sequence 8 AA;  
 Query Match 65.6%; Score 42; DB 18; Length 8;  
 Best Local Similarity 100.0%; Pred. No. 7.8e+05;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 2 POGIAGOR 9  
 |||||||  
 Db 1 POGIAGOR 8  
 RESULT 3  
 AAY97994  
 ID AAY97994 standard; peptide; 8 AA.  
 XX  
 AC AAY97994;  
 XX  
 DT 11-SEP-2000 (first entry)  
 XX  
 DE Synthetic substrate peptide #1, used to characterise a novel protease.  
 XX  
 KM Synthetic peptide substrate; enzyme characterisation; protease;  
 KM collagenase activity; gelatin; incomplete degradation; Aureobacterium;  
 KM strain MIM-CG-9535-1; foodstuff manufacture; cosmetic.  
 XX  
 OS Synthetic.  
 XX  
 FH Key Location/Qualifiers  
 FH Modified-site 1 /note= "Conjugated to dinitrophenol (DNP)"  
 FT FT Misc-difference 8 /note= "D-form residue"  
 FT  
 XX  
 PD JP2000102381-A.  
 XX  
 PN 11-APR-2000.  
 XX  
 PF 30-SEP-1998; 98JP-0277901.  
 XX  
 PR 30-SEP-1998; 98JP-0277901.  
 XX  
 PA (DAITI-) DAICHI KARAGU YAKUHIN KK.  
 (MIYA-) MIYAGI KAGAKU KOGYO KK.

XX DR WPI: 2000-332081/29.  
 XX XX  
 PT Novel protease having limited degradation activity for thermally  
 PT denatured collagen and non-denatured solubilized collagen, produced  
 PT from specific microorganism strain, has specific enzymological  
 PT properties -  
 XX XX  
 PS Claim 1: Page 2; 9pp: Japanese.  
 XX XX  
 CC The invention relates to a novel protease from *Aureobacterium* strain  
 CC MIM-CG-9535-1 (FERMP-1667). Its molecular weight is 23 kD (plus or  
 CC minus 2 kD) based on SDS-PAGE (sodium dodecyl sulphate polyacrylamide  
 CC gel electrophoresis). The protease has limited degradation activity for  
 CC thermally denatured collagen (gelatin) and non-denatured solubilised  
 CC collagen of molecular weights of 130 kD and 300 kD respectively. Gelatin  
 CC and non-denatured collagen are degraded to products of molecular weights  
 CC of 70 kD and 40 kD respectively. The optimum pH and temperature of the  
 CC protease is pH 5.5-7 and 37-40 degrees Celsius. The enzyme is able to  
 CC partially degrade the synthetic substrate DNP-pro-Gln-Gly-Ile-Ala-Gly-  
 CC Gln-D-Arg (AAV97994) which contains a proline residue, but it does not  
 CC appear to degrade the synthetic substrate DNP-Gln-Gly-Ile-Ala-Gly-Gln-  
 CC D-Arg (AAV97995) which does not contain a proline. The protease is  
 CC inhibited by O-phenanthroline and L-cysteine, and is also partially  
 CC inhibited by ethylene-diamine tetraacetic acid, N-ethylmaleimide,  
 CC iodoacetamide and phenyl methane sulphonylfluoride. The novel protease  
 CC is useful for degrading high molecular weight gelatin and solubilised  
 CC collagen into smaller units. These can be used in foodstuffs and  
 CC cosmetics as gelatinisers, foaming agents and thickeners, and can also  
 CC be used in the manufacture of medicine capsules. The decomposition  
 CC products of the novel protease have low antigenicity, good solubility  
 CC and low gelling strength, and are easy to form into films and capsules.  
 CC Sequences AAV97994 and AAV97995 represent synthetic protease substrates  
 CC used to characterise the activity of the novel protease of the  
 CC invention.  
 CC XX  
 SQ Sequence 8 AA:  
 Query Match 65.6%; Score 42; DB 21; Length 8;  
 Best Local Similarity 100.0%; Pred. No. 7.8e+05;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 2 PGIAGOR 9  
 | | | | | | | |  
 Db 1 PGIAGOR 8  
 RESULT 4  
 AAU07721  
 ID AAU07721 standard: peptide; 8 AA.  
 XX XX  
 AC AAU07721:  
 XX XX  
 DT 21-NOV-2001 (first entry)  
 XX XX  
 DE Human leukaemia cell HL-60 45 kD matrix metalloprotease substrate.  
 XX XX  
 KW Human leukaemia cell; HL-60; 45 kD matrix metalloprotease;  
 KW protease cleavage site; cytosolic; antirheumatic;  
 KW antirheumatic; antiarthritic; immunosuppressive; antiinflammatory;  
 KW anti-HIV; virucide; viral display; gene therapy; cancer; inflammation;  
 KW rheumatoid arthritis; autoimmune disease; infection; AIDS;  
 KW acquired immunodeficiency syndrome; herpes; hepatitis;  
 KW protease inhibitor; drug screening.  
 KW XX  
 OS Synthetic.  
 XX XX  
 FH Key Location/Qualifiers  
 FT Cleavage-site 5..6  
 FT /label= Protease\_cleavage\_site  
 XX XX  
 PN WO200162980-A1.  
 XX XX

PD 30-AUG-2001.  
 XX XX  
 PF 23-FEB-2001; 2001MO-US05859.  
 XX XX  
 PR 25-FEB-2000; 2000US-0185203.  
 XX XX  
 PA (CAMP-) CAMBRIDGE DRUG DISCOVERY LTD.  
 XX XX  
 PI Russell SJ, Chadwick MP;  
 XX XX  
 DR WPI: 2001-541706/60.  
 XX XX  
 PT Identifying protease inhibitors by assaying for the presence of a  
 PT transferable label from a viral display package in the presence of test  
 PT compound, where an increase in cell label indicates the compound as a  
 PT protease inhibitor -  
 XX XX  
 PS Disclosure; Page 10; 46pp: English.  
 XX XX  
 CC The invention relates to identifying a test substance for the ability to  
 CC inhibit a protease by contacting a protease-containing target cell with a  
 CC viral display package (comprising a receptor-binding polypeptide which  
 CC binds to a receptor on the surface of the cell, a protease cleavage site  
 CC for the protease expressed by the cell, and a fusion-mediating  
 CC polypeptide, such that proteolytic cleavage of the cleavage site does not  
 CC permit substantial transfer of the transferable label from the phage  
 CC package to the cell), and detecting a transferable label to indicate if  
 CC the substance is a protease inhibitor. The method is useful for  
 CC identifying a test substance for its ability to inhibit a protease. The  
 CC delivery of an expressible polynucleotide to a target cell is also  
 CC possible, and both methods are applicable for a number of target cells.  
 CC The methods are useful for therapeutic purposes and as a model system for  
 CC optimising delivery of transferable labels. The protease inhibitors  
 CC identified are useful for treating cancer, inflammation, rheumatoid  
 CC arthritis, autoimmune diseases, infections including AIDS (acquired  
 CC immunodeficiency syndrome), herpes and hepatitis. A whole range of  
 CC proteins, peptides, antisense transcripts and ribozyme sequences can be  
 CC encoded within an expressible polynucleotide (i.e. a gene therapy  
 CC technique) and delivered to a target cell for a therapeutic effect. The  
 CC target cells may also be cells infected by pathogens such as HIV virus,  
 CC rhinovirus, herpes virus, hepatitis virus or other infectious agents  
 CC which expresses proteases. The present sequence is a synthetic  
 CC substrate peptide which is cleaved by a 45 kD matrix metalloprotease  
 CC secreted by HL-60 human leukaemia cells. This peptide can be used  
 CC in the method of the invention.  
 CC XX  
 SQ Sequence 8 AA:  
 Query Match 65.6%; Score 42; DB 22; Length 8;  
 Best Local Similarity 100.0%; Pred. No. 7.8e+05;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 2 PGIAGOR 9  
 | | | | | | | |  
 Db 1 PGIAGOR 8  
 RESULT 5  
 AAB70111  
 ID AAB70111 standard: peptide; 8 AA.  
 XX XX  
 AC AAB70111:  
 XX XX  
 DT 18-MAY-2001 (first entry)  
 XX XX  
 DE Synthetic collagenase substrate of novel protease enzyme.  
 XX XX  
 KW Collagenase; gelatin; protease; jelly production;  
 KW gelatin capsule synthesis; drug synthesis.  
 XX XX  
 OS Synthetic.  
 XX XX  
 FH Key Location/Qualifiers

FT Modified-site 1 /note="attached to DNP"  
 FT XX  
 PN JP2000325095-A.  
 XX  
 PD 28-NOV-2000.  
 XX  
 PF 18-MAY-1999; 99JP-0137528.  
 XX  
 PR 18-MAY-1999; 99JP-0137528.  
 XX  
 PA (MIYA-) MIYAGI KAKAKU KOGYO KK.  
 PA (DAIT-) DAITCHI KAKAGU YAKUHIN KK.  
 DR WPI; 2001-228834/24.  
 XX  
 PT Preparing degraded gelatin peptides useful in drugs, cosmetics and  
 PT foodstuffs, using novel protease which cuts protein at specific points  
 PT so that resulting peptides have specific N-terminal amino acid  
 PT sequences -  
 XX  
 PS Claim 6; Page 1; 16pp; Japanese.  
 XX  
 CC The present sequence is provided in a specification relating to a method  
 CC for manufacturing peptides from proteins. The proteins are degraded using  
 CC a novel protease enzyme which cuts the proteins at between 1 and 3  
 CC points. The resulting peptides have an N-terminal end having a specific  
 CC amino acid sequence. The method may be used in the manufacture of  
 CC jelly-like foodstuffs, gelatin capsules and drugs. It is also used for  
 CC coating the surface of a material useful as an artificial living tissue.  
 CC The gelatin peptides prepared using the novel protease enzyme have  
 CC reduced allergenicity and antigenicity and dissolve readily in cold  
 CC water. The jelly-like gels prepared using the gelatin peptides fuse well  
 CC with other liquids even at room temperature.  
 XX  
 SQ Sequence 8 AA:  
 Query Match 65.6%; Score 42; DB 22; Length 8;  
 Best Local Similarity 100.0%; Pred. No. 7.8e+05;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 2 POGIAGOR 9  
 |||||  
 Db 1 POGIAGOR 8  
 RESULT 6  
 AAO14105  
 ID AAO14105 standard; peptide; 8 AA.  
 AC AAO14105;  
 XX  
 DT 22-APR-2002 (first entry)  
 XX  
 DE Dinitrophenol-tagged substrate peptide.  
 DE  
 XX  
 KM Dinitrophenol-tagged substrate; ovoidantferrin; skin care;  
 KM cosmetic product; collagenase; gelatinase; collagen; elastin; elastase.  
 XX  
 OS Synthetic.  
 OS  
 XX  
 FH Key Location/Qualifiers  
 FT Modified-site 1 /note="N-terminal dinitrophenol tag"  
 FT MISC-difference 8 /note="D-form residue"  
 XX  
 PN WO200187292-A2.  
 XX  
 PD 22-NOV-2001.  
 XX  
 PF 14-MAY-2001; 2001WO-CA00687.  
 XX

PR 15-MAY-2000; 2000US-204352P.  
 XX  
 XX (CAIN-) CANADIAN INOVATECH INC.  
 PA  
 PI Smith SR, Charter EA;  
 XX  
 DR WPI; 2002-062327/08.  
 XX  
 PT Use of ovotransferrin for inhibiting degradation of elastin or  
 PT collagen, and cosmetic compositions comprising ovotransferrin, useful  
 PT for skin care -  
 XX  
 PS Example 3; Page 23; 34pp; English.  
 XX  
 CC The invention comprises the use of ovotransferrin in cosmetic skin care  
 CC compositions to inhibit elastase and collagenase (also known as  
 CC gelatinase). Collagen and elastin are both main components of skin and  
 CC are commonly used in topically-applied cosmetic products. Collagen and  
 CC elastin are degraded by elastase and collagenase which are present in  
 CC both humans and microorganisms. It has been found that the addition of  
 CC ovotransferrin to a composition containing collagen and elastin will  
 CC substantially inhibit the degradation of collagen and elastin by  
 CC collagenase and elastase. The compositions of the invention are useful as  
 CC skin care compositions. The present sequence is a dinitrophenol-tagged  
 CC substrate peptide used in an example of the invention.  
 XX  
 SQ Sequence 8 AA:  
 Query Match 65.6%; Score 42; DB 23; Length 8;  
 Best Local Similarity 100.0%; Pred. No. 7.8e+05;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 2 POGIAGOR 9  
 |||||  
 Db 1 POGIAGOR 8  
 RESULT 7  
 AAR38477  
 ID AAR38477 standard; peptide; 9 AA.  
 AC AAR38477;  
 XX  
 DT 02-DEC-1993 (first entry)  
 XX  
 DE Sequence of synthetic fragment of peptide P-15 which spans  
 DE approx. residues 766-780 of the alpha-1(I) chain of collagen.  
 DE  
 XX  
 KM Synthetic peptide; alpha-1(I) chain; collagen; binding; P-15.  
 KM  
 OS Synthetic.  
 OS  
 XX  
 PN WO9311781-A.  
 XX  
 PD 24-JUN-1993.  
 XX  
 PF 03-DEC-1992; 92WO-US10420.  
 XX  
 PR 09-DEC-1991; 91US-0804782.  
 XX  
 PA (REGC ) UNIV CALIFORNIA.  
 PA  
 PI Bhatnagar RS;  
 XX  
 DR WPI; 1993-213814/26.  
 XX  
 PT Synthetic peptide mimicking collagen binding to cells - used in  
 PT composite with bio-material matrix for soft and hard tissue  
 PT repair or reconstruction  
 XX  
 PS Claim 1; Table 1; page 9; 26pp; English.  
 XX  
 CC The P-15 peptide spans approx. residues 766-780 of the alpha-1(I)

CC chain of collagen. The P-15 region does not occur as a natural  
 CC fragment of collagen nor is it a product of natural enzymatic  
 CC cleavage. The P-15 region represent half of one turn of the collagen  
 CC triple helix. The sequence contd. in P-15 can acquire a conformation  
 CC dramatically different from the triple helical conformation  
 CC generally observed in the rest of the collagen molecule. AAR8477-82  
 CC is a family of synthetic peptide fragments of P-15. They mimic the  
 CC cell binding domain of collagen. The domain includes a core  
 CC sequence that, at physiologic conditions, is folded in a beta-bend  
 CC formed at the 773-774 Ile-Ala. The relative cell-binding activity  
 CC of this peptide is 100.

XX Sequence 9 AA;

Query Match 65.6%; Score 42; DB 14; Length 9;

Best Local Similarity 100.0%; Pred. No. 7.8e+05; Mismatches 0; Indels 0; Gaps 0;

OY 2 POGIAGOR 9  
 DB 2 POGIAGOR 9

RESULT 8  
 AAW27492  
 ID AAW27492 standard; peptide; 9 AA.

AC AAW27492;

DT 20-APR-1998 (first entry)

DE Cell binding peptide #2 derived from collagen.

KW Bioreactor; packing material; cell culture; collagen alpha1(I) chain;  
 cell binding peptide; matrix.

OS Synthetic.  
 OS Mammalia.

PN US5674848-A.

PD 07-OCT-1997.

PF 03-AUG-1994; 94US-0285570.

PR 14-AUG-1989; 89US-0393621.

PR 09-DEC-1991; 91US-0804782.

PA (REGC ) UNIV CALIFORNIA.

PI Bhatnagar RS;

WPI: 1997-502373/46.

PT Bioreactor packing material for cell culture - comprising matrix  
 coated with cell binding peptide

PS Claim 1; Col 18; 13pp; English.

CC This is a specifically claimed peptide, derived from a region of the  
 CC alpha1(I) chain of collagen which is sometimes referred to as "P-15". It  
 CC can be used as a cell binding peptide in a new packing material, which  
 CC is useful for cell culture in a bioreactor. The material comprises a  
 CC matrix formed of a biomaterial, i.e. a material that is biologically  
 CC compatible for in vivo applications and for cell culture in vitro, and  
 CC the cell binding peptide. A bioreactor containing the packing material  
 CC can be used to culture cells, e.g. mammalian cells for the production of  
 CC monoclonal antibodies. The peptides are more effective than collagen in  
 CC promoting cell attachment.

XX Sequence 9 AA;

Query Match 65.6%; Score 42; DB 18; Length 9;

Best Local Similarity 100.0%; Pred. No. 7.8e+05; Mismatches 0; Indels 0; Gaps 0;

OY 2 POGIAGOR 9  
 DB 2 POGIAGOR 9

RESULT 9  
 AAW18826  
 ID AAW18826 standard; peptide; 9 AA.

AC AAW18826;

DT 05-JAN-1998 (first entry)

DE Collagen binding peptide mimic 2.

KW Implant; biomaterial matrix; enhanced cell binding; collagen;  
 beta-bend; fold; substrate; reconstructive surgery; bone; ligament;

KW repair; tooth.

OS Synthetic.

PN US5635482-A.

PD 03-JUN-1997.

PF 14-AUG-1989; 89US-0393621.

PR 22-JUL-1994; 94US-0278878.

PR 14-AUG-1989; 89US-0393621.

PR 09-DEC-1991; 91US-0804782.

PA (REGC ) UNIV CALIFORNIA.

PI Bhatnagar RS;

WPI: 1997-309859/28.

PT Implant bearing cell-binding collagen-mimetic peptide - for  
 promoting cell attachment

PS Claim 1; Column 18; 12pp; English.

CC New implants comprise a biomaterial matrix and a peptide carried by the  
 CC matrix, where the peptide has enhanced cell binding with respect to  
 CC collagen and has a domain that mimics collagen binding to cells, the  
 CC domain including at least -Ile-Ala- folded in a beta-bend at  
 CC physiological conditions. The peptide is one of AAW18825-34 or one of 3  
 CC tripeptides (Nac-Ile-Ala-Ala; Ile-Ala-beta Ala; and Nac-Ile-Ala-N-Me).  
 CC The implant is used as a substrate for growing cells, e.g. for use in  
 CC reconstructive surgery, e.g. for bone or ligament repair or as tooth  
 CC implants. The peptide promotes cell attachment to the matrix and also  
 CC cell migration into the matrix when the matrix is porous.

XX Sequence 9 AA;

Query Match 65.6%; Score 42; DB 18; Length 9;  
 Best Local Similarity 100.0%; Pred. No. 7.8e+05; Mismatches 0; Indels 0; Gaps 0;

OY 2 POGIAGOR 9  
 DB 2 POGIAGOR 9

RESULT 10  
 AAY29992  
 ID AAY29992 standard; peptide; 9 AA.

AC AAY29992;

DT 02-DEC-1999 (first entry)  
 XX  
 DE Collagen cell binding domain mimotope #2.  
 XX  
 KW Collagen: cell binding domain; biomaterial; soft tissue repair;  
 KM hard tissue repair; reconstruction; cell surface receptor;  
 XX fibronectin; beta-bend; cartilage; tendon; ligament; bone.  
 OS Synthetic.  
 XX  
 PN US5956428-A.  
 XX  
 PD 28-SEP-1999.  
 XX  
 PF 20-MAY-1997; 97US-0859610.  
 XX  
 PR 22-JUL-1994; 94US-0278878.  
 PR 14-AUG-1989; 89US-0393621.  
 PR 09-DEC-1991; 91US-0804782.  
 XX  
 PA (REGC ) UNIV CALIFORNIA.  
 XX  
 PI Bhatnagar RS;  
 XX  
 DR WPI; 1999-561009/47.  
 XX  
 PT Synthetic peptide additives with enhanced collagen binding affinities  
 PT useful for the production of apparatus for soft tissue, cartilage and  
 PT bone repair -  
 XX  
 PS Claim 3; Column 25; 16pp; English.  
 XX  
 CC The present invention describes synthetic peptide additives (SPAs) with  
 CC enhanced collagen binding affinities. AAY29991 to AAY30000 represent  
 CC specifically claimed examples of the SPA's. The additives comprise  
 CC domains that mimic the binding sites of collagen to cells (but with  
 CC higher affinity) and promote cell attachment when the additives are  
 CC carried on repair or reconstructive apparatus. The SPA may be used in  
 CC the construction of apparatus for soft tissue, cartilage, tendon,  
 CC ligament and bone repair. The SPA mimics and enhances the binding of  
 CC cells to the tissue repair apparatus.  
 XX  
 SQ Sequence 9 AA:  
 Query Match 65.6%; Score 42; DB 20; Length 9;  
 Best Local Similarity 100.0%; Pred. No. 7.8e+05;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 2 POGIAGOR 9  
 IIIIIIII  
 DB 2 POGIAGOR 9  
 RESULT 11  
 AAG67403  
 ID AAG67403 standard; peptide; 9 AA.  
 XX  
 AC AAG67403;  
 XX  
 DT 13-NOV-2001 (first entry)  
 XX  
 DE Synthetic peptide mimicking cell binding domain of collagen.  
 XX  
 KW Cell binding; collagen; cell migration; collagen receptor; tissue repair;  
 KM metalloproteinase; prolyl hydroxylase; tissue reconstruction; arthritis;  
 KM bone repair; tooth implant; ligament repair; scar tissue; osteoporosis;  
 KM bone disease; cartilage repair; joint disease; tendon repair.  
 XX  
 OS Synthetic.  
 XX  
 PN US6268348-B1.  
 XX  
 PD 31-JUL-2001.

XX  
 PF 08-JUN-1999; 99US-0328347.  
 XX  
 PR 22-JUL-1994; 94US-0278878.  
 PR 20-MAY-1997; 97US-0859610.  
 PR 14-AUG-1989; 89US-0393621.  
 PR 09-DEC-1991; 91US-0804782.  
 XX  
 PA (REGC ) UNIV CALIFORNIA.  
 XX  
 PI Bhatnagar RS;  
 XX  
 DR WPI; 2001-540321/60.  
 XX  
 PT New collagen binding synthetic peptide useful for soft and hard tissue  
 PT repair e.g. bone repairs comprises a family of amino acid sequence -  
 XX  
 PS Claim 2; Column 25; 16pp; English.  
 XX  
 CC The present sequence represents a synthetic peptide, which mimics the  
 CC cell binding domain of collagen. The cell binding ability of the  
 CC peptide is enhanced with respect to collagen. The peptide promotes cell  
 CC migration into porous lattices; binds to collagen receptors; induces  
 CC metalloproteinases; can down regulate prolyl hydroxylase and collagen;  
 CC inhibits cell binding to collagen or inhibits cell migration in vitro.  
 CC The peptide is used for soft and hard tissue repair or reconstruction,  
 CC e.g. bone repair, tooth implants and ligament repair; for in vitro uses;  
 CC as an inhibitor of collagen synthesis to block formation of scar tissue  
 CC and thus promotes scarless healing; as bone filling/fusion for  
 CC osteoporosis and other bone diseases; cartilage repair for arthritis and  
 CC other joint disease and tendon repair; for soft tissue repair e.g. nerve,  
 CC organ, skin, vascular, muscle and ophthalmic applications.  
 XX  
 SQ Sequence 9 AA:  
 Query Match 65.6%; Score 42; DB 22; Length 9;  
 Best Local Similarity 100.0%; Pred. No. 7.8e+05;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 2 POGIAGOR 9  
 IIIIIIII  
 DB 2 POGIAGOR 9  
 RESULT 12  
 AAR11114  
 ID AAR11114 standard; peptide; 15 AA.  
 XX  
 AC AAR11114;  
 XX  
 DT 17-MAY-1991 (first entry)  
 XX  
 DE Collagen peptide analogue.  
 XX  
 KW Collagen alpha-1 chain; cell adhesion; vertebrates.  
 XX  
 OS synthetic.  
 XX  
 PN WO9102537-A.  
 XX  
 PD 07-MAR-1991.  
 XX  
 PF 13-AUG-1990; 90WO-US04538.  
 XX  
 PR 14-AUG-1989; 89US-0393621.  
 XX  
 PA (REGC ) UNIV OF CALIFORNIA.  
 XX  
 PI Bhatnagar RS;  
 XX  
 DR WPI; 1991-087110/12.  
 XX  
 PT Synthetic peptide(s) analogous to collagen - promote cell adhesion

XX Claim 1; page 16; 20pp; English.  
 PS  
 CC This peptide corresponds to a region of the alpha-1 chain of collagen.  
 CC It is useful in a compsn. for promoting vertebrate cell (esp.  
 CC fibroblast) adhesion to a substrate. It is free from natural  
 CC folding, glycosylation, cross-linking, hydroxylation and association  
 CC with other peptide chains.  
 CC  
 SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 12; Length 15;  
 Best Local Similarity 100.0%; Pred. No. 0.94;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 2 POGIAGOR 9  
 |||||  
 Db 5 POGIAGOR 12

## RESULT 13

AAR38476  
 ID AAR38476 standard; peptide; 15 AA.

AC AAR38476;  
 XX

DT 02-DEC-1993 (first entry)  
 XX

DE Sequence of peptide P-15 which spans approx. residues 766-780 of the  
 DE alpha-1(I) chain of collagen.  
 XX

KW Synthetic peptide; alpha-1(I) chain; collagen; binding; P-15.  
 XX

OS Synthetic.  
 OS

PN WO9311781-A.  
 XX

PD 24-JUN-1993.  
 XX

PF 03-DEC-1992; 92MO-US10420.  
 XX

PR 09-DEC-1991; 91US-0804782.  
 XX

PA (REGC ) UNIV CALIFORNIA.  
 XX

PI Bhatnagar RS;  
 XX

DR WPI; 1993-213814/26.  
 XX

PT Synthetic peptide mimicking collagen binding to cells - used in  
 PT composite with bio-material matrix for soft and hard tissue  
 PT repair or reconstruction  
 XX

PS Disclosure: Table 1, page 9; 26pp; English.  
 XX

CC The P-15 peptide spans approx. residues 766-780 of the alpha-1(I)  
 CC chain of collagen. The P-15 region does not occur as a natural  
 CC fragment of collagen nor is it a product of natural enzymatic  
 CC cleavage. The P-15 region represent half of one turn of the collagen  
 CC triple helix. The sequence contd. in P-15 can acquire a conformation  
 CC dramatically different from the triple helical conformation  
 CC generally observed in the rest of the collagen molecule. AAR38477-82  
 CC is a family of synthetic peptide fragments of P-15. They mimic the  
 CC cell binding domain of collagen. The domain includes a core  
 CC sequence that, at physiologic conditions, is folded in a beta-bend  
 CC formed at the Ile-Ala.  
 CC  
 XX

SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 14; Length 15;  
 Best Local Similarity 100.0%; Pred. No. 0.94;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 2 POGIAGOR 9  
 |||||  
 Db 5 POGIAGOR 12

## RESULT 14

AAM27491  
 ID AAM27491 standard; peptide; 15 AA.

AC AAM27491;  
 XX

DT 20-APR-1998 (first entry)  
 XX

DE Cell binding peptide #1 derived from collagen.  
 XX

KW Bioreactor; packing material; cell culture; collagen alpha1(I) chain;  
 KW cell binding peptide; matrix;  
 XX

OS Synthetic.  
 OS

PN US5674848-A.  
 XX

PD 07-OCT-1997.  
 XX

PF 03-AUG-1994; 94US-0285570.  
 XX

PR 14-AUG-1989; 89US-0393621.  
 XX

PR 09-DEC-1991; 91US-0804782.  
 XX

PA (REGC ) UNIV CALIFORNIA.  
 XX

PI Bhatnagar RS;  
 XX

DR WPI; 1997-502373/46.  
 XX

PT Bioreactor packing material for cell culture - comprising matrix  
 PT coated with cell binding peptide  
 XX

PS Claim 1; Col 18; 13pp; English.  
 XX

CC The present peptide sequence corresponds to a region of the alpha1(I)  
 CC chain of collagen which is sometimes referred to as "P-15". It can be  
 CC used as a cell binding peptide in a new packing material, which is useful  
 CC for cell culture in a bioreactor. The material comprises a matrix formed  
 CC of a biomaterial, i.e. a material that is biologically compatible for in  
 CC vivo applications and for cell culture in vitro, and the cell binding  
 CC peptide. A bioreactor containing the packing material can be used to  
 CC culture cells, e.g. mammalian cells for the production of monoclonal  
 CC antibodies. The peptides are more effective than collagen in promoting  
 CC cell attachment.  
 CC  
 XX

SQ Sequence 15 AA;

Query Match 65.6%; Score 42; DB 18; Length 15;  
 Best Local Similarity 100.0%; Pred. No. 0.94;  
 Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 2 POGIAGOR 9  
 |||||  
 Db 5 POGIAGOR 12

## RESULT 15

AAM18825  
 ID AAM18825 standard; peptide; 15 AA.

AC AAM18825;  
 XX

DT 05-JAN-1998 (first entry)  
 XX

DE Collagen binding peptide mimic 1.  
 XX

KW implant; biomaterial matrix; enhanced cell binding; collagen;  
 KW beta-bend; fold; substrate; reconstructive surgery; bone; ligament;  
 KW repair; tooth.

OS Synthetic.

PN US5635482-A.

PD 03-JUN-1997.

PF 14-AUG-1989; 89US-0393621.

PR 22-JUL-1994; 94US-0278878.

PR 14-AUG-1989; 89US-0393621.

PR 09-DEC-1991; 91US-0804782.

PA (REGC ) UNIV CALIFORNIA.

PI Bhatnagar RS;

DR WPI; 1997-309859/28.

PT implant bearing cell-binding collagen-mimetic peptide - for  
 promoting cell attachment

PS Claim 1; Column 18; 12pp; English.

XX New implants comprise a biomaterial matrix and a peptide carried by the  
 CC matrix, where the peptide has enhanced cell binding with respect to  
 CC collagen and has a domain that mimics collagen binding to cells, the  
 CC domain including at least -Ile-Ala- folded in a beta-bend at  
 CC physiological conditions. The peptide is one of AA18825-34 or one of 3  
 CC tripeptides (Nac-Ile-Ala; Ile-Ala-beta Ala; and Nac-Ile-Ala-N-Me).  
 CC The implant is used as a substrate for growing cells, e.g. for use in  
 CC reconstructive surgery, e.g. for bone or ligament repair or as tooth  
 CC implants. The peptide promotes cell attachment to the matrix and also  
 CC cell migration into the matrix when the matrix is porous.

XX Sequence 15 AA:

Query Match 65.6%; Score 42; DB 18; Length 15;

Best Local Similarity 100.0%; Pred. No. 0.94; Indels 0; Gaps 0;

Matches 8; Conservative 0; Mismatches 0;

OY 2 POGIAGOR 9  
 |||||

DB 5 POGIAGOR 12

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